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INTERWEST ENERGY ALLIANCE

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
Lea Márquez Peterson - Chairwoman
Sandra Kennedy
Justin Olson
Anna Tovar
Jim O'Connor

IN THE MATTER OF THE COMMISSION'S INVESTIGATION INTO REGIONAL PLANNING, MARKETS, AND COLLABORATION AMONG LOAD-SERVING ENTITIES IN THE WESTERN INTERCONNECTION; INVESTIGATION INTO THE QUESTION OF MANDATORY OR VOLUNTARY PARTICIPATION IN REGIONAL TRANSMISSION ORGANIZATIONS, ENERGY IMBALANCE MARKETS, EXTENDED DAY-AHEAD MARKETS, AND OTHER ORGANIZED WHOLESALE ENERGY MARKETS BY ARIZONA'S LOAD-SERVING ENTITIES: CONSIDERATION OF THE COST AND RELIABILITY IMPACTS AND BENEFITS OF PARTICIPATION TO THE GRID, ARIZONA RATEPAYERS, UTILITY SHAREHOLDERS, AND THE STATE OF ARIZONA; CONSIDERATION OF THE NEEDS, GOALS, OBJECTIVES, AND PURPOSES OF PARTICIPATION; AND CONSIDERATION OF THE ISSUES OF COST ALLOCATION, RESOURCE ADEQUACY, AND GOVERNANCE ASSOCIATED WITH PARTICIPATION, AS WELL AS ANY OTHER ISSUE THE COMMISSION MAY DEEM RELEVANT TO ITS INVESTIGATION.

DOCKET NO. E-00000A-21-0271

The Interwest Energy Alliance (Interwest) is the regional trade association for utility scale renewable energy companies representing manufacturing and development leaders in solar, wind, storage and transmission. The Interwest footprint covers Arizona, Nevada, New Mexico, Colorado, Utah, and Wyoming, giving the organization a regional viewpoint and experience working in states with widely varying energy policies. In each, we work to promote a clean, reliable and affordable electric grid. Interwest appreciates this opportunity to "address the issue of regional planning and collaboration among utilities in the Western Interconnection" [1] and offers these comments in response to letters filed in this docket by Chairwomen Márquez Peterson and Utilities Division Director Abinah, which seek both general and specific feedback from utilities and other stakeholders on the path towards market development. Interwest hopes to provide a regional context that reviews existing work being done on the

[1] See https://docket.images.azcc.gov/E000016042.pdf?i=1635225282295, filed by Chairwoman Márquez Peterson, 10/6/2021

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topic, and looks forward to filing responsive comments once we have had the opportunity to review utility and other stakeholder filings.

In states across the West, a major point of discussion among public utility commissions, utilities, and stakeholders revolves around regional wholesale market development and the various aspects that must be considered in order to enhance cooperation across balancing area and state boundaries, resulting in the greatest number of benefits. While this conversation is not new to the region, 2021 has seen accelerated momentum. As the proportion of load located in states with clean energy standards or carbon emission reduction targets grows, legislators, regulators and utilities are recognizing the need for increased coordination to achieve policy outcomes with the greatest efficiency and lowest cost to customers. Additionally, due to tight energy markets resulting from extreme weather events or failures to plan for and procure sufficient resources in a timely manner, reliability discussions and resource adequacy frameworks are front of mind for decision-makers and stakeholders across the country, including FERC. FERC received an historic response to the recent Advanced Notice of Proposed Rulemaking that could revise rules and regulations concerning regional transmission planning, cost allocation and generator interconnection[2] - which will be aided by implementation of a Regional Transmission Organization (RTO). Given this backdrop, the focus of some discussions has turned towards the development or expansion of an RTO in the West, which could aid Arizona utilities in meeting their own clean energy goals while maintaining cost-effective and reliable service by creating new opportunities for competitive, open-access energy provision and alleviating transmission constraints.

Interwest has been an active participant in the western RTO discussion of recent years and has worked to build support for an RTO that accurately assesses the costs and benefits of renewable energy in a market environment that maintains or increases reliability and efficiency. As an organization, we have collaborated with legislators, regulators and stakeholders in Nevada and Colorado to enact landmark policies with directives for utilities to join an RTO, and we have provided the perspective of renewable developers to a variety of studies and working groups that are focused on objectively evaluating the options and benefits of market development. This filing is intended to summarize several notable discussions and studies regarding western market development in order to demonstrate the current state of play, and to offer potential courses of action for the ACC to consider.

Because the state of discussion is ongoing, in this document Interwest seeks to present a synopsis of several of the most active and significant areas of discussion, however this should not be construed as an exhaustive description of the landscape. There are multiple layers of engagement, from FERC at the federal level, to various state commissions and legislatures, and in existing markets and other industry and stakeholder working groups. Each of these pieces represent a crucial aspect of the larger movement towards enhanced coordination in the West with an aim of achieving a more reliable grid and lower carbon emissions, and in this filing Interwest hopes the Commission will gain an understanding of these efforts in order to inform Arizona's perspective and role in the regional planning topography.

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[2] See https://www.ferc.gov/news-events/news/advance-notice-proposed-rulemaking-building-future-through-electric-regional

Existing platforms: CAISO, SPP and NWPP

While Interwest views an RTO as the best approach to achieve levels of renewable energy to meet energy and climate goals across the region, it is important to recognize the current landscape and contemporary market participation. As the Commission is well-aware, Arizona's major utilities currently participate in or are entering into the CAISO Western Energy Imbalance Market (EIM) in coordination with many of the region's other utilities. While participation in the EIM has saved APS and SRP ratepayers over $300 million since 2016,[3] and has saved ratepayers across the region over $1.7 billion since 2014, the EIM is incremental in nature and represents just a fraction of the potential savings that could be realized from additional coordination encompassing day ahead trading, reduced transmission costs and other factors that would likely be implemented in more holistic markets. The following figure shows an approximation of the savings that could be achieved by different market constructs.

Figure 15: Achievable Benefits as a Percentage of Load Diversity Savings

[4]

The Grid Modernization Advisory Group, created at the direction of the New Mexico Legislature as a result of New Mexico's 2020 HB 233, the Energy Grid Modernization Roadmap Act, was tasked with studying RTO development, and describes the need to move beyond largely bilateral markets as follows:

> "As described in great detail in the "Western Flexibility Assessment, Investigating the West's Changing Resource Mix and Implications for System Flexibility" (Western Flexibility Study),[5] the system as it currently operates does not allow for efficient, cost effective transfer of energy resources and impedes effective balancing of capacity resources which is necessary to cost-effectively and reliably achieve each state's renewable and clean energy goals.
>
> In areas without RTOs/ISOs, wholesale power transactions take place through bilateral trading (i.e., through direct negotiation and contracting between buying and selling utilities, and between utilities and independent power producers on a contract-by-contract basis). Wholesale power markets can help promote the deployment of renewable energy, because they can more efficiently match electricity demand with excess local supply. This is especially true of real-time markets, which can help efficiently accommodate the variable nature of renewable energy, as well as geographic diversity between renewable resources and load centers. The potential for sales of renewable energy increases exponentially, because the potential number of buyers multiplies to include all buyers located within the region. This enables development and financing for many more renewable projects. To the extent that RTOs can help expedite transmission planning and

[3] See https://www.westerneim.com/Pages/About/QuarterlyBenefits.aspx
[4] Retrieved from: "State-Led Market Study Technical Report," https://static1.squarespace.com/static/59b97b188fd4d2645224448b/t/6148a012aa210300cbc4b863/1632149526416/Final+Roadmap+-+Technical+Report+210730.pdf, page 30
[5] "Western Flexibility Assessment," westernenergyboard.org/wp-content/uploads/2019/12/12-10-19-ES-WIEB-Western-Flexibility-Assessment-Final-Report.pdf

management, they can also help ensure sufficient transmission capacity to match renewable generation with electricity loads." [6]

The EIM and its eastern counterpart, Southwest Power Pool's (SPP) Western Energy Imbalance Service (WEIS),[7] represent important strides forward in terms of regional coordination. The additional savings produced by enhanced markets, both incremental (such as CAISO's Extended Day Ahead Market) and end-stage (an RTO), are preferable both from an economic and reliability perspective. As described in the aforementioned New Mexico whitepaper:

> "The EIM entities are now working towards creating a new market structure to add day-ahead trading opportunities through the extended day-ahead market (EDAM). The EIM and EDAM are important steps to market expansion, however alone neither will get anywhere close to addressing the bifurcated transmission system that severely limits the build-out of renewables that is necessary to achieve grid decarbonization and to meet market demand." [8]

While the development of EDAM took a backseat to immediate planning concerns in the CAISO region, the effort has recently reemerged and appears to be developing momentum, with current EIM members collaborating with CAISO and transmission owners to develop common principles that could form the framework for the day ahead market.[9] The EDAM shows promising additional cost savings for Arizona on the order of $45 million each year, in addition to significantly reduced renewable energy curtailments and a modest decrease in emissions.[10] The following figure shows EDAM benefits to states across the West:

Figure 33: 2030 Status Quo Day-ahead Annual Benefits ($M)

2030 Status Quo Day-ahead Annual Benefits

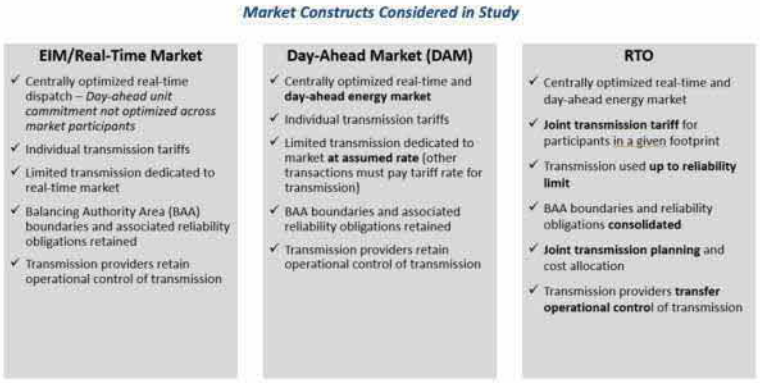
State	APC Benefit ($M)	Capacity Benefit ($M)	Total Benefit ($M)	
AZ	($11)	$56	$45	
CA	$63	$91	$153	
CO	$3	$41	$44	
ID	$2	$44	$45	
MT	$1	$18	$19	
NM	$1	$32	$33	
NV	($13)	$25	$12	
OR	$1	$63	$64	
UT	$3	$28	$30	
WA	($4)	$189	$184	Estimated Ongoing Cost
WY	$2	$9	$10	
TOTAL	**$47**	**$596**	**$642**	$76-226

[6] "Grid Modernization Advisory Group Whitepaper Series #5: Establishing a New Mexico RTO Task Force," https://www.emnrd.nm.gov/ecmd/wp-content/uploads/sites/3/RTOTaskforce_1.29.21.pdf, page 4
[7] See https://spp.org/weis
[8] New Mexico Grid Modernization Advisory Group, https://www.emnrd.nm.gov/ecmd/wp-content/uploads/sites/3/RTOTaskforce_1.29.21.pdf
[9] See https://www.caiso.com/Documents/EDAM-Common-Design-Principles-Concepts.pdf, page 1
[10] State-Led Market Study, https://static1.squarespace.com/static/59b97b188fd4d2645224448b/t/6148a012aa210300cbc4b863/1632149526416/Final+Roadmap+-+Technical+Report+210730.pdf, page 47

Similarly, SPP also seeks to expand its options for western participation, launching an effort to include certain utilities in three western states in their existing market.[11] This effort will capture marginal benefits for participating utilities, but because of the relatively small footprint and other barriers to additional coordination, customers will not see savings of the same magnitude as forecasted in west-wide options. SPP has also launched its "Markets+" initiative which appears to serve a similar market function as CAISO's EDAM.[12]

Another effort taking shape is the Northwest Power Pool's (NWPP) resource adequacy program, known as the Western Resource Adequacy Program (WRAP), which is seen by some as another precursor or incremental stage towards development of an RTO. The WRAP would enable utilities across the region to share verified firm capacity during extreme weather events, backed by physical assets with multiple levels of verification, by leveraging the West's diverse resources, in turn lowering overall resource buildout[13] and costs to customers. While the program is still in the planning process, it has convened a range of diverse stakeholders including many public utility commissioners from states across the West and will include a Committee of State Representatives to ensure state voices are heard in the planning process.

Despite the gains achieved through the EIM and the potential benefits that EDAM could provide, study after study has found that the benefits of full RTO development can easily surpass those realized in real time (EIM/WEIS) or day-ahead (EDAM) markets. The following chart shows some of the key elements of the different stages of market development.



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Completed studies:

Western Flexibility Assessment

The Western Flexibility Assessment described the substantial benefits that can be achieved by a more integrated and flexible grid as well as the need for additional coordination to meet state policy goals. The study shows that the region will need to add approximately 9 GW of new renewable energy capacity each year from 2025 to 2035 in order to meet existing state policy goals, and can do so much more cost-effectively with the level of integrated regional planning that would be enabled by an RTO.[15]

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[11] See https://www.spp.org/western-services/rto-west/
[12] See https://www.spp.org/western-services/marketsplus/
[13] See https://www.nwpp.org/private-media/documents/2021-08-30_NWPP_RA_2B_Design_v4_final.pdf, page 10
[14] State-Led Market Study, page. 5
[15] See Western Flexibility Assessment

State-led Market Options Study

One of the most notable studies conducted in coordination with states around the region, the State-led Market Options Study mentioned earlier (state-led study) (docketed by Chairwoman Marquez Peterson),[16] finds potential savings for western states of $2 billion per year under the single-market option. It is important to note that the study finds the greatest savings under the largest potential market scenario from a geographic perspective, which captures a large majority of western load and resource diversity. In the filing in this docket dated October 6, 2021, Chairwoman Marquez Peterson requests information regarding state participation in a market and whether certain states should be included or excluded. Interwest recommends considering the findings of the state-led study suggesting that larger footprints increase economic benefits.[17] The state-led study was funded by the US Department of Energy and administered by the Utah Governor's Office of Energy Development in collaboration with other western states including Arizona alongside California, Colorado, Montana, Idaho, New Mexico, Nevada, Oregon, Washington, and Wyoming.

> "The study includes technical Production Cost Modeling of different market structures and footprints, which will include detailed results for each individual state in the West. The study also includes a Market and Regulatory Review intended to help states evaluate the more qualitative aspects of different organized market configurations." [18]

The state-led study includes a review of concerns raised by some states regarding governance issues and stresses that state involvement will be critical in shaping a new market that protects state authority over generation and reliability while maximizing economic benefits.

Colorado

Colorado is investigating the benefits and potential costs of its utilities joining an RTO on several levels. The 2019 General Assembly passed the Colorado Transmission Coordination Act which required the Colorado Public Utility Commission (CoPUC) to investigate the merits of electric utility participation in energy imbalance markets, regional transmission organizations, power pools and joint tariffs and to make a determination of whether it is in the public interest for Colorado utilities to join these regional market options by December 1, 2021. A study analyzing the benefits of various constructs covering different levels of services and a variety of geographic areas was released earlier in 2021 for the CoPUC's consideration, and like others finds significant benefits in RTO participation.[19]

Another Colorado study conducted on behalf of Holy Cross Energy and the Intermountain Rural Electric Association finds significant cost savings for ratepayers in 2040 totalling $1.76 billion annually (or $255

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[16] See State-Led Market Study, page 7

[17] Other studies suggest that the inclusion of additional states and utilities provide enhanced reliability in the form of diversity benefits and reduced regulation reserves; see eg. https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2019_IRP_Volume_II_Appendices_A-L.pdf, pages 100-102

[18] New Mexico Grid Modernization Advisory Group, page 6

[19] See Colorado PUC proceeding no. 19M-0495E, "Siemens PTI-CTCA Evaluation of Market Alternatives," filed June 11, 2021. Accessible at https://www.dora.state.co.us/pls/efi/EFI_Search_UI.search

per customer), as well as tens of thousands of new jobs and greenhouse gas emission reductions, through more efficient and transparent transmission coordination.[20]

Regional working groups:

WIRED

Another area of engagement on western market issues is known as Western Interstate Regional Electricity Dialogue (WIRED).[21]

> "WIRED is a collaborative effort of the Center for the New Energy Economy (CNEE), the Western Electric Industry Leaders (WEIL) Group, and many of the western governors' energy policy advisors. Under the leadership of former Colorado Governor Bill Ritter, Jr., the participants have met over the course of 2020 to develop recommendations to western governors on three interrelated topics: (1) Resource Adequacy; (2) Transmission Planning; and (3) Greenhouse Gas Accounting & State Clean Energy Standards." [22]

WIRED convened a range of industry and political leaders and found that resource and transmission planning and procurement over a regional footprint rather than a traditional utility-by-utility approach "would ultimately result in a more diverse and reliable mix that would lower costs to consumers while meeting state policy goals." [23]

Arizona has already engaged in certain recommendations proffered by the WIRED initiative by opening this investigative docket and Interwest supports many of the recommendations proposed in the WIRED findings, including the undertaking of a regional simulation of resource and transmission planning operations.

Western Markets Exploratory Group (WMEG)

Recently, a group of large western utilities announced their participation in the informal WMEG to "explor[e] the potential for a staged approach to new market services, including day-ahead energy sales, transmission system expansion, and other power supply and grid solutions consistent with existing state regulations." [24] All three of Arizona's large utilities are included in this effort, and while outside stakeholders have seen little engagement as of yet, it is widely seen as a positive step towards the development of an RTO.

The above analyses should not be viewed as an exhaustive list of work done on western market development, nor do we recommend the Commission limit its scope to considering only these issues or

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[20] See "Energy Imbalance Market Options for Colorado," https://www.vibrantcleanenergy.com/wp-content/uploads/2020/10/CO-EIM-Options-Report.pdf

[21] See "Recommendations to Western Governors," https://www.westernenergyboard.org/wired-initiative-recommendations-to-western-governors/

[22] New Mexico Grid Modernization Advisory Group, page 6

[23] "WIRED Transmission Planning & Development Working Group Report," https://cnee.colostate.edu/wp-content/uploads/2021/01/final-review-draft-WIRED-transmission-work-group.pdf, page 1

[24] "Several Western power providers announce plans to explore market options," https://www.aps.com/en/About/Our-Company/Newsroom/Articles/Several-Western-power-providers-announce-plans-to-explore-market-options

studies. Other benefits realized by RTOs include increased economic development and new renewable energy projects, as well as accompanying corporate growth, particularly by large companies with corporate sustainability goals. RTOs facilitate streamlined contracts between power producers and corporate buyers, opening access to PPAs across the footprint of the entire market rather than within utility territory. Areas with the strongest resources typically saw the greatest increases in RTO regions - Arizona's best in class solar could position the state as a primary beneficiary in a regional marketplace.[25]

State policy adoption:

Legislation

As previously mentioned, two western states enacted legislation in 2021 requiring utilities to begin the process of studying and joining an RTO by 2030. Interwest supported each of these bills: SB448 [26] in Nevada and SB72 [27] in Colorado. Each had a similar high-level directive with varying accessory provisions: namely, utilities in each state must join an RTO by 2030. Importantly, utilities are provided conditions under which they can file for an exemption should an RTO either not exist or should joining one be found to be counter to the public interest. Additionally, each creates a new state entity to plan or study new regional transmission projects and policies, [28] putting these states in the driver's seat to shape potential markets.

The Oregon legislature also passed SB589 in 2021, which shares commonalities with each of the previously described bills as well as with this proceeding. SB589 established a task force "to review the results of regional RTO studies and identify additional data needs, regulations and legislative initiatives that may be needed to facilitate moving Oregon utilities towards participation in an RTO." [29] The study is being conducted by the state's Department of Energy and will present findings in the coming weeks in order to provide recommendations ahead of the 2022 legislative session.

PNM/Avangrid Merger

In 20-00222-UT, the New Mexico Public Regulation Commission is considering the merger application of utilities PNM and Avangrid. In the Second Amended Stipulation, one of the merger commitments relates to an RTO. Importantly, this case is still pending. Per the filing:

> "In recognition of the potential benefits to New Mexico and PNM's customers of PNM joining a Regional Transmission Organization or Independent System Operator ("RTO"), including the implementation of open and competitive electric generation markets, elimination of barriers to market entry and preclusion of control of bottleneck electric transmission facilities in the provision of retail and wholesale electric service, Joint Applicants shall use all reasonable efforts to find or participate in the development of a viable RTO that it can join by January 1, 2030, or as

[25] See "The Role of RTO/ISO Markets in Facilitating Renewable Generation Development," http://files.brattle.com/files/7444_the_role_of_rto_iso_markets_in_facilitating_renewable_generation_development.pdf, page 5
[26] NV SB448, 2021, https://www.leg.state.nv.us/App/NELIS/REL/81st2021/Bill/8201/Overview
[27] CO SB72, 2021, https://leg.colorado.gov/bills/sb21-072
[28] In Colorado, the Colorado Electric Transmission Authority, was given authority to bond and utilize eminent domain while coordinating with other entities to develop interstate transmission. In Nevada, the Regional Transmission Coordination Task Force will make recommendations to the Governor and legislature regarding opportunities to join an RTO.
[29] See: Oregon Department of Energy, "Regional Transmission Organization Study: Oregon Perspectives," https://www.oregon.gov/energy/energy-oregon/Pages/RTO.aspx

soon thereafter as possible, subject to Commission review and approval. As soon as possible following the completion of the merger, but not later than January 1, 2022, PNM will organize and convene an RTO stakeholder initiative, to include representatives of interested organizations, to develop and initiate the process by which PNM will explore and participate in the development of an RTO. PNM will communicate the progress of its exploration and development activities on a regular basis to the members of the stakeholder initiative and the Utility Division Staff. PNM will also participate in and report on any other organized efforts to form an RTO that it could potentially join. PNM will work with stakeholders, including the NM AG, to determine if joining the RTO is in the best interests of customers and the State. The Commission shall make the final determination as to whether joining an RTO is in the public interest, including the interests of customers and the State. Participation in the Western EIM, EDAM, or other similar market would not constitute participation in an RTO."

If the merger is successful and incorporates this commitment, it would mark the third western state with binding commitments for a utility to join an RTO by 2030.

Recommendations

With momentum building around the development of a western RTO, Interwest encourages the Commission to convene a stakeholder group including utilities, corporate energy users, independent power producers, renewable energy and transmission developers, related NGOs, and other Commission-determined stakeholders to open a dialogue on Arizona's options for coordination with neighboring states, including those that have directives to join an RTO and those that do not. While Interwest believes that further studies would only confirm the myriad benefits described by predecessors, this docket can serve as a convening point to establish a more formalized group similar in structure and purpose to the proposed Resource Planning Advisory Councils contemplated in docket no. RU-00000A-18-0284. This would be analogous to entities established in Colorado and Nevada to engage in regional discussions to gather information and make recommendations to the Commission to shape policy regarding market and transmission development, and could serve as Arizona's voice in the regional conversation.

Sincerely,

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